

DOCKET NO. 305 - Cellco Partnership d/b/a Verizon Wireless	}	Connecticut
application for a Certificate of Environmental Compatibility and	}	
Public Need for the construction, maintenance, and operation of a	}	Siting
wireless telecommunications facility located at 5 Old Farm Road	}	
or 8 Old New Hartford Road, Barkhamsted, Connecticut.	}	Council
		November 3, 2005

Findings of Fact

Introduction

1. Cellco Partnership d/b/a Verizon Wireless (Verizon), in accordance with provisions of General Statutes §§ 16-50g through 16-50aa, applied to the Connecticut Siting Council (Council) on May 10, 2005 for the construction, operation, and maintenance of a wireless telecommunications facility at 5 Old Farm Road or 8 Old New Hartford Road, Barkhamsted, Connecticut. (Verizon 1, pp. 1-2)
2. The party in this proceeding is the applicant. An intervenor is New Cingular Wireless PCS, LLC (New Cingular). (Transcript 1- 4:00 p.m. [Tr. 1], pp. 4-5)
3. The purpose of the proposed facility is to provide wireless service to coverage gaps identified by Verizon on Route 44 between West Hill Road and Route 318 in Barkhamsted. (Verizon 1, p. 1, Attachment 7)
4. Pursuant to General Statutes § 16-50m, the Council, after giving due notice thereof, held a public hearing on July 19, 2005, beginning at 4:00 p.m. and continuing at 7:00 p.m. at the Barkhamsted Elementary School, 62 Ripley Hill Road, Barkhamsted, Connecticut. (Council's Hearing Notice dated June 15, 2005; Tr. 1, p. 3; Transcript 2 – 7:00 p.m. [Tr. 2], p. 3)
5. The Council and its staff conducted an inspection of the proposed sites on July 19, 2005, beginning at 3:00 p.m. During the field inspection, the applicant flew a four-foot diameter balloon at each site to simulate the heights of the proposed towers: a black balloon was flown to a height of 154 feet at the 5 Old Farm Road site and a red balloon was flown to a height of 124 feet at the 8 Old New Hartford Road site. (Council's Hearing Notice dated June 15, 2005; Tr. 1, p. 14)
6. Notice of the application was provided to all abutting property owners by certified mail. Public notice of the application was published in The Hartford Courant on May 4 and 5, 2005. (Verizon 1, p. 5, Attachment 5)
7. Verizon notified the Barkhamsted First Selectman, Michael D. Fox, of the proposal on March 10, 2005. Mr. Fox did not meet with Verizon representatives to discuss the proposal. (Verizon, p. 18; Tr. 1, pp. 40-41)
8. Verizon would provide lease free space on the tower for any emergency use municipal antenna. The Town of Barkhamsted has not expressed an interest in using the tower. (Verizon 1, p. 11; Tr. 2, pp. 22-23)

9. Pursuant to General Statutes § 16-50j (h), on June 8, 2004 and August 4, 2005, the following State agencies were solicited to submit written comments regarding the proposed facility: Department of Environmental Protection (DEP), Department of Public Health (DPH), Council on Environmental Quality (CEQ), Department of Public Utility Control (DPUC), Office of Policy and Management (OPM), Department of Economic and Community Development (DECD), and the Department of Transportation (DOT). (Record)
10. No state agency responded with comment on the application. (Record)

Telecommunications Act

11. In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunications services, including cellular telephone service. Through the Federal Telecommunications Act of 1996, Congress seeks to promote competition, encourage technical innovations, and foster lower prices for telecommunications services. (Council Administrative Notice Item No. 7)
12. In issuing cellular licenses, the Federal government has preempted the determination of public need for cellular service by the states, and has established design standards to ensure technical integrity and nationwide compatibility among all systems. Verizon is licensed by the Federal Communications Commission (FCC) to provide personal wireless communication service to Litchfield County, Connecticut. (Council Administrative Notice Item No. 7; Verizon 1, p. 7)
13. The Telecommunications Act of 1996 prohibits local and state entities from discriminating among providers of functionally equivalent services. (Council Administrative Notice Item No. 7)
14. The Telecommunications Act of 1996, a Federal law passed by the United States Congress, prohibits any state or local entity from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions. This Act also blocks the Council from prohibiting or acting with the effect of prohibiting the provision of personal wireless service. (Council Administrative Notice Item No. 7)

Site Selection

15. Verizon established a search ring for the target service area in June of 2003. The search ring consisted of four different areas north and south of Route 44 in the Old New Hartford Road area. No existing structures suitable for telecommunications use were located within the search ring. (Verizon 1, Attachment 9; Verizon 3, Q. 5)
16. The nearest existing tower facility to the search ring is a 180-foot monopole located on Oakdale Avenue in Winchester, approximately 1.3 miles east of the proposed sites. Verizon is located at the 125-foot level of this tower. Verizon would not be able to achieve coverage objectives by increasing the height of the antennas at this location due to signal interruption caused by the hilly topography of the area. (Verizon 1, Attachment 7, Attachment 10; Tr. 1, p. 34; Tr. 2, p. 21)

17. After determining there were no viable structures within the search area, Verizon searched for properties suitable for tower development. Verizon investigated seven parcels and selected two for site development. The five rejected parcels and reasons for their rejection are as follows:
- a) 16 W. West Hill Road – did not meet coverage objectives using an antenna height of 170 feet.
 - b) 22 W. West Hill Road – did not meet coverage objectives using an antenna height of 180 feet.
 - c) 4 Old North Road – property owner not interested.
 - d) 72 Old North Road – development would require extensive site disturbance.
 - e) 236 New Hartford Road – site would provide adequate coverage; however, visibility impact would be unacceptable.
- (Verizon 1, Attachment 3)

Site Description – Old Farm Road Facility

18. The proposed Old Farm Road facility is located on a 4.16-acre parcel owned by John N. and Ethel C. Lavieri at 5 Old Farm Road in Barkhamsted. The parcel is north of Route 44 and is developed with a single-family residence. (Verizon 1, p. 2, Attachment 1)
19. The site parcel is zoned Industrial, I-2. The parcel is surrounded by property owned by The Lavieri Group at 15 Old Farm Road. (Verizon 1, p. 2; Attachment 1)
20. The tower site is located in the wooded northwest section of the property on a sloping hillside. The lessor's residence is approximately 115 feet south of the tower site. The tower location is at an elevation of 814 feet above mean sea level (amsl). (Verizon 1, Attachment 1)
21. Verizon would construct a 145-foot monopole at the site designed as a pine tree. The overall height of the tower with simulated branches would be 154 feet above ground level (agl). The tower would be designed to support six levels of antennas with a 10-foot center-to-center vertical separation. The tower would be constructed in accordance with the American National Standards Institute TIA/EIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures". (Verizon 1, p. 11, Attachment 1)
22. Verizon would install 12 panel antennas on t-arm mounts at a centerline height of 145 feet agl. New Cingular proposes to install six antennas at the 135-foot level of the tower. (Verizon 1, pp. 2, 11, Attachment 1; New Cingular 1, Q. 3)
23. Verizon proposes to construct a 75-foot by 57-foot equipment compound at the base of the tower. Verizon would install a 12-foot by 30-foot equipment shelter on a concrete pad within the compound. A seven-foot high chain link and barbed wire fence would enclose the compound. New Cingular would install a 12-foot by 20-foot equipment shelter on a concrete pad within the compound. (Verizon 1, p. 11, Attachment 1; New Cingular 1, Q. 6)
24. Access to the site would be provided by a 12-foot wide, 250-foot long driveway of new construction extending from an existing paved driveway on the property. Underground utilities would be installed to the compound from a utility pole on the property. A diesel or propane generator would provide emergency power to the site. (Verizon 1, p. 11, Attachment 1; Tr. 1, pp. 11-12)
25. Development of the site would require 350 cubic yards of cut and 350 cubic yards of fill. A retaining wall would be required on the east and south sides of the equipment compound. (Verizon 1, Attachment 1; Tr. 1, p. 44)

26. The nearest abutting property from the tower site is approximately 70 feet to the west owned by The Lavieri Group. The tower setback radius would extend onto The Lavieri Group property by 84 feet. Verizon would construct a tower with a yield point of 65 feet agl to prevent the tower from affecting the abutting property in the event of a tower failure. (Verizon 1, Attachment 1; Tr. 1, p. 31)
27. The nearest off-parcel residential structure from the proposed tower site is approximately 900 feet to the southeast. No other off-parcel residences are located within 1,000 feet of the site. (Verizon 1, Q. 1; Tr. 1, p. 42)
28. Land within a quarter-mile of the site is zoned industrial and residential. Industrially developed parcels are located to the south and east. Low-density residential development occurs throughout the area. (Verizon 1, p. 16)
29. The estimated cost of construction for the Old Farm Road facility is:

Cell site radio equipment	450,000.
Tower, coax, and antenna	200,000.
Utilities	20,000.
Equipment building	50,000.
<u>Site preparation, facility installation</u>	<u>130,000.</u>
Total estimated cost	\$850,000.

(Verizon 1, p. 20)

Site Description – Old New Hartford Road Facility

30. The proposed Old New Hartford Road facility is located on a 2.75-acre parcel owned by Peter Lavieri at 8 Old New Hartford Road in Barkhamsted. The undeveloped, wooded parcel is located north of Route 44 and west of the proposed Old Farm Road facility. The triangular parcel borders Old North Road, Old New Hartford Road, and the Salister/Jacobs property. (Verizon 1, p. 2, Attachment 2)
31. The site parcel is zoned residential, RA-2. (Verizon 1, p. 2)
32. The tower site is located in the central portion of the parcel at an elevation of 752 feet amsl. (Verizon 1, Attachment 2)
33. Verizon would construct a 117-foot monopole at the site designed as a pine tree and capable of supporting six levels of antennas with a 10-foot center-to-center vertical separation. The overall height of the tower with simulated branches would 124 feet agl. The tower would be constructed in accordance with the American National Standards Institute TIA/EIA-222-F “Structural Standards for Steel Antenna Towers and Antenna Support Structures”. (Verizon 1, p. 11, Attachment 2)
34. Verizon would install 12 panel antennas on t-arm mounts at a centerline height of 115 feet agl. New Cingular proposes to install six antennas at a centerline height of 105 feet agl. (Verizon 1, pp. 3, 11, Attachment 2; New Cingular 1, Q. 3)
35. Verizon proposes to construct a 75-foot by 57-foot equipment compound at the base of the tower. Verizon would install a 12-foot by 30-foot equipment shelter on a concrete pad within the compound. New Cingular proposes to install a 12-foot by 20-foot equipment shelter within the compound. A seven-foot high chain link and barbed wire fence would enclose the compound. (Verizon 1, p. 11, Attachment 2; New Cingular 1, Q. 6)

36. Verizon would construct a 12-foot wide, 100-foot long gravel access road from Old North Road to the site. Underground utilities would be installed along the access road from a utility pole on Old North Road. (Verizon 1, p. 3, Attachment 2)
37. Development of the site would require 921 cubic yards of cut and 339 cubic yards of fill. A retaining wall would be required on the south side of the equipment compound. (Verizon 1, Attachment 2; Tr. 1, pp. 44-45)
38. The nearest property from the tower is site approximately 115 feet to the west. The property is developed with a residence and is owned by Peter Salister and Linda Jacobs. The tower setback radius would extend onto the Salister and Jacobs property by nine feet. The tower would be designed with a yield point of 52 feet agl. (Verizon 1, Attachment 2; Tr. 1, p. 30)
39. There are seven residences within 1,000 feet of the site. The nearest residence is approximately 340 feet west of the tower site (Salister and Jacobs property). (Verizon 1, p. 13; Attachment 2)
40. The estimated cost of construction for the Old New Hartford Road facility is:

Cell site radio equipment	450,000.
Tower, coax, and antenna	180,000.
Utilities	20,000.
Equipment building	50,000.
<u>Site preparation, facility installation</u>	<u>80,000.</u>
Total estimated cost	\$780,000.

(Verizon 1, p. 20)

41. Verizon prefers to develop the Old New Hartford Road site since development would require less tree clearing, a shorter access road, and a shorter tower when compared to the Old Farm Road site. (Tr. 1, p. 24)

Environmental Concerns

42. The proposed facilities would have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places or upon properties of traditional cultural importance to Connecticut's Native American communities. (Verizon 1, Attachment 11)
43. The proposed sites contain no known existing populations of Federal or State Endangered, Threatened or Special Concern Species. (Verizon 1, Attachment 11)
44. Development of the Old Farm Road site would require the removal of 43 trees with a diameter of ten inches or greater. No trees with a diameter of 10 inches or greater would be removed during development of the Old New Hartford Road site. (Verizon 1, Attachment 1, Attachment 2)
45. Development of either site would not directly affect any wetlands or watercourses. Neither site is located within a flood zone. (Verizon 1, p. 18)
46. Aircraft hazard obstruction marking or lighting would not be required for either site. (Verizon 1, Attachment 11)

47. According to methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997), assuming all Verizon and New Cingular antennas are pointed at the base of the tower and all channels are operating simultaneously, the maximum power density at the base of the Old Farm Road tower would be 0.037 mW/cm^2 or 3.7% of the standard for Maximum Permissible Exposure (MPE) as adopted by the FCC. The maximum power density at the base of the Old New Hartford Road facility would be 0.061 mW/cm^2 or 6.1% of the MPE. (Verizon 1, Attachment 11; New Cingular 1, Q. 3)

Visibility

48. The average height of the tree canopy within a two-mile radius of the site is 65 feet agl. The Old Farm Road site would be visible above the tree canopy from approximately 42-acres within a two-mile radius of the site (refer to Figure 1). The Old New Hartford Road site would be visible above the tree canopy from approximately 17-acres within a two-mile radius of the site. Seasonal visibility is expected from an additional 15-acres for each proposed site. (Verizon 1, Attachment 10)
49. Visibility of the proposed Old Farm Road tower from specific locations within a 1.25-mile radius of the site is as follows:

Location	Visible	Approximate Portion of Tower Visible	Distance from Tower
Intersection of Route 44 and Old North Road	No		0.2 miles south
Route 44 in the vicinity of Fancher Road	Yes	30 feet with hillside as backdrop	1.0 miles east
Route 44 east of Old Farm Road	Yes	115 feet - unobstructed	0.3 miles southeast
West Hill Road	Yes	65 feet - unobstructed	0.9 miles west
Old New Hartford Road	Yes	125 feet – through vegetation	1.1 miles west
Route 44 west of the site	Yes	25 feet - unobstructed	0.7 miles west
Residence at 9 Old Farm Road	Yes	80 feet - through vegetation	0.2 miles east

(Verizon 1, Attachment 10)

50. Visibility of the proposed Old New Hartford Road tower from specific locations within a 1.25-mile radius of the site is as follows:

Location	Visible	Approximate Portion of Tower Visible	Distance from Tower
Intersection of Route 44 and Old North Road	Yes	30 feet - unobstructed	0.2 miles southeast
Route 44 east of Old Farm Road	No		0.4 miles southeast
Route 44 in the vicinity of Fancher Road	No		1.1 miles east
West Hill Road	Yes	10 feet with hillside as backdrop	0.8 miles west
Old New Hartford Road	Yes	10 feet – unobstructed with hillside as backdrop	1.0 miles west
Route 44 west of the site	Yes	25 feet - unobstructed	0.6 miles west
Residence at 16 Old New Hartford Road	Yes	Compound and bottom portion of tower through vegetation	0.1 miles west
Residence at 9 Old Farm Road	No		0.3 miles west

(Verizon 1, Attachment 10; Tr. 1, p. 25)

51. The Old Farm Road facility would be visible year-round from three separate sections of Route 44 totaling 0.6 miles near the site. Due to the topography and vegetation within the view-shed area, the upper 100 feet of the tower would be visible from some locations. (Verizon 1, Attachment 10; Tr. 1, pp. 24-25)
52. The Old New Hartford Road facility would be visible year-round from three separate 0.1-mile sections of Route 44 near the site with mostly the upper portion of the tower visible. (Verizon 1, Attachment 10)
53. Both towers would be visible year round from six residences. (Verizon 1, Attachment 10)
54. The towers would not be visible from any hiking trails maintained by the DEP or the Connecticut Forest and Parks Association. (Verizon 1, Attachment 10; Tr. 1, p. 35)
55. The towers would not be visible from Route 318, a state scenic road approximately two miles east of the sites. (Verizon 1, Attachment 10; Tr. 1, p. 35)

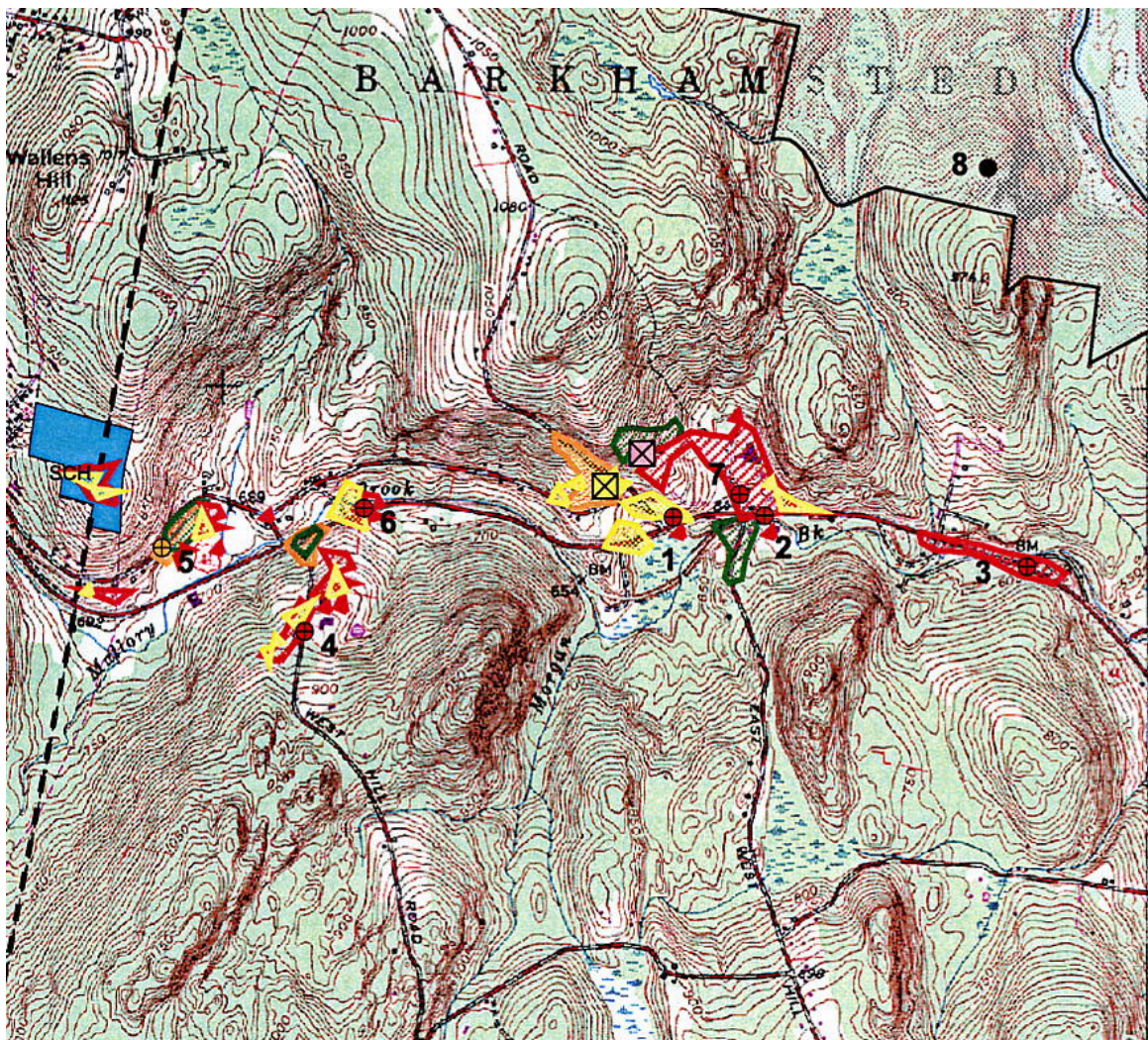
Verizon - Existing and Proposed Wireless Coverage

56. Verizon proposes to operate 1900 MHz equipment at this site. Verizon is designing the site for in-vehicle coverage, using a signal level threshold of -85 dBm. (Verizon 1, Attachment 11; Tr. 1, pp. 42-43)
57. Verizon currently experiences an approximate 1.8-mile coverage gap on Route 44 between West Hill Road and Route 318 (refer to Figure 2). (Verizon 1, Attachment 7)
58. Coverage objectives would be met on Route 44 by installing antennas at 145 feet agl at the Old Farm Road site and 115 feet agl at the Old New Hartford Road site (refer to Figure 3). (Verizon 1, Attachment 7)
59. Installing antennas at 135 feet agl at the Old Farm Road site or 105 feet agl at the Old New Hartford Road site would result in a tenth of a mile coverage gap on Route 44 near Dew Road. The frequency of dropped calls would increase in the gap area. (Verizon 3, Q. 2; Tr. 1, pp. 19-22)

New Cingular - Existing and Proposed Wireless Coverage

60. New Cingular operates in both the 800 and 1900 MHz frequency bands. New Cingular would install 800/1900 MHz dual band antennas at the proposed sites. New Cingular seeks to provide reliable coverage to Route 44 and surrounding roads. (New Cingular 1, Q. 2)
61. New Cingular's existing signal level in the target service area is below -90 dBm at 1900 MHz and in below -80 dBm at 850 MHz. New Cingular seeks to provide coverage at a signal level of -75 dBm (refer to Figure 5). (New Cingular 1, Q. 1, Q. 2)
62. New Cingular would meet coverage objectives with either site at the proposed antenna heights (refer to Figure 6). (New Cingular 1, Q. 5; Tr. 1, p. 48)

FIGURE 1
LOCATION AND VISIBILITY OF PROPOSED SITES

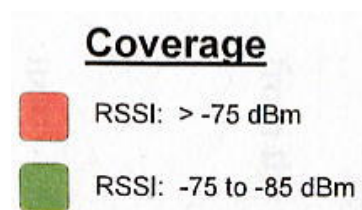
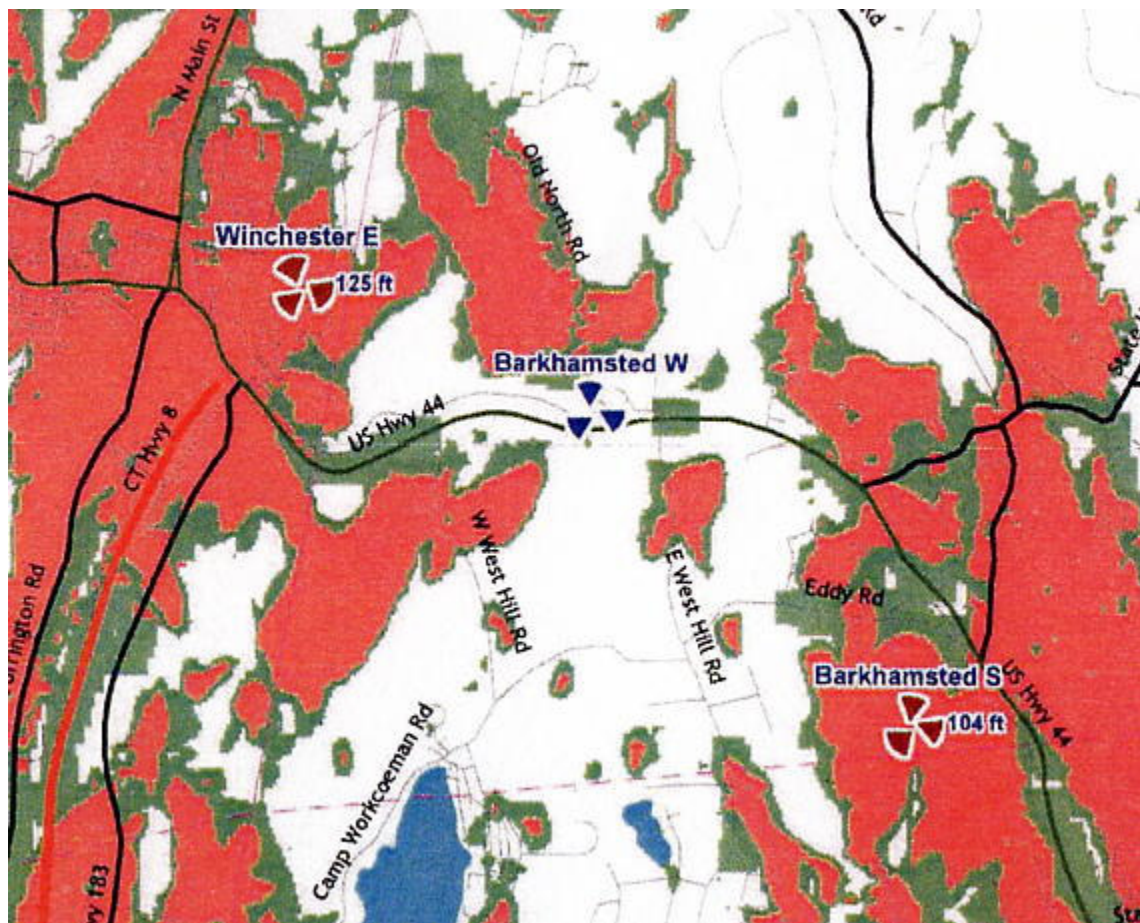


LEGEND

- ✕ *8 Old New Hartford Road Site Location
- ✕ *5 Old Farm Road Site Location
- Photopoint Locations - April 6, 2005
 - Balloon is not visible
 - ⊕ Balloon visible through trees
 - Balloon visible above trees
- Anticipated seasonal visibility - 8 Old New Hartford Road (Approximately 15 acres)
- Anticipated seasonal visibility - 5 Old Farm Road (Approximately 15 acres)
- Year-round visibility 8 Old New Hartford Road (Approximately 17 acres)
- Year-round visibility 5 Old Farm Road (Approximately 42 acres)

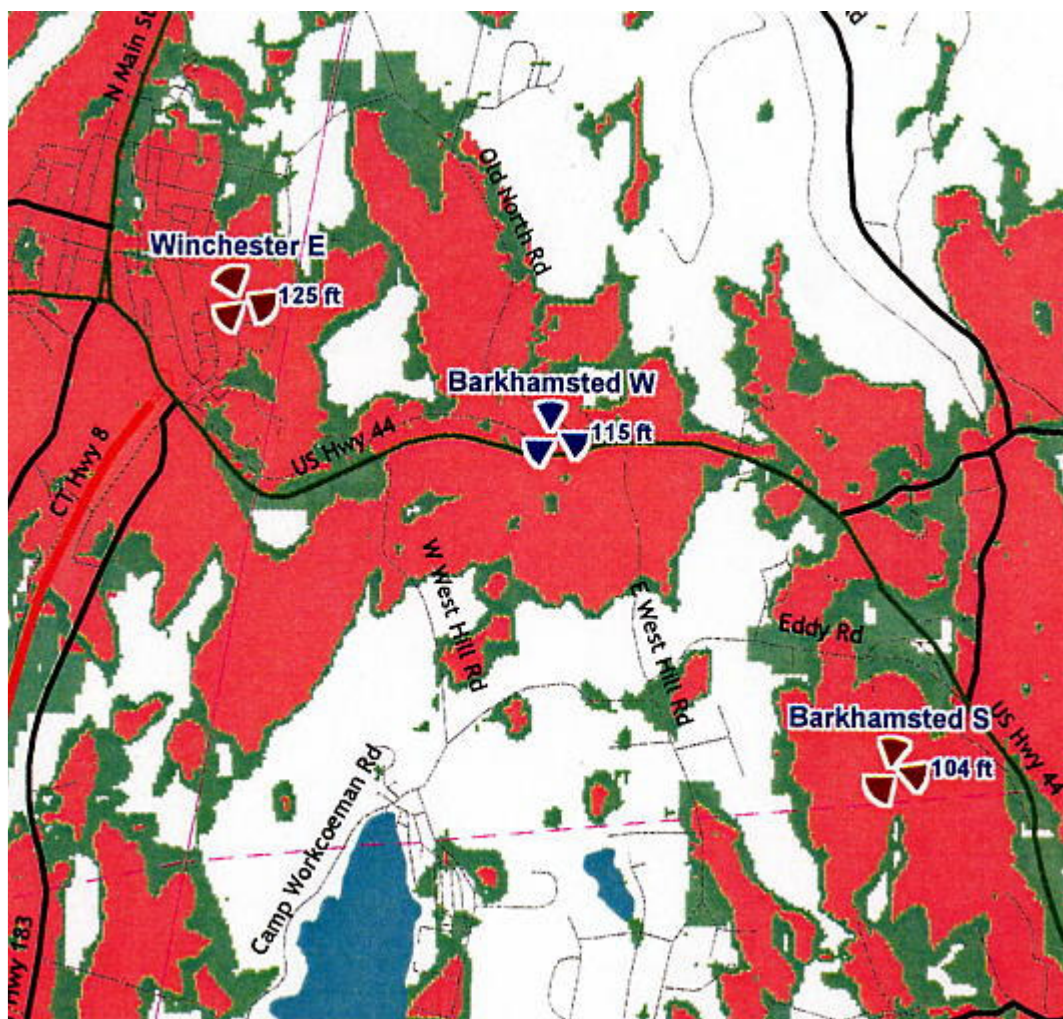
(Verizon 1, Attachment 10)

FIGURE 2
VERIZON EXISTING COVERAGE



(Verizon 1, Attachment 7)

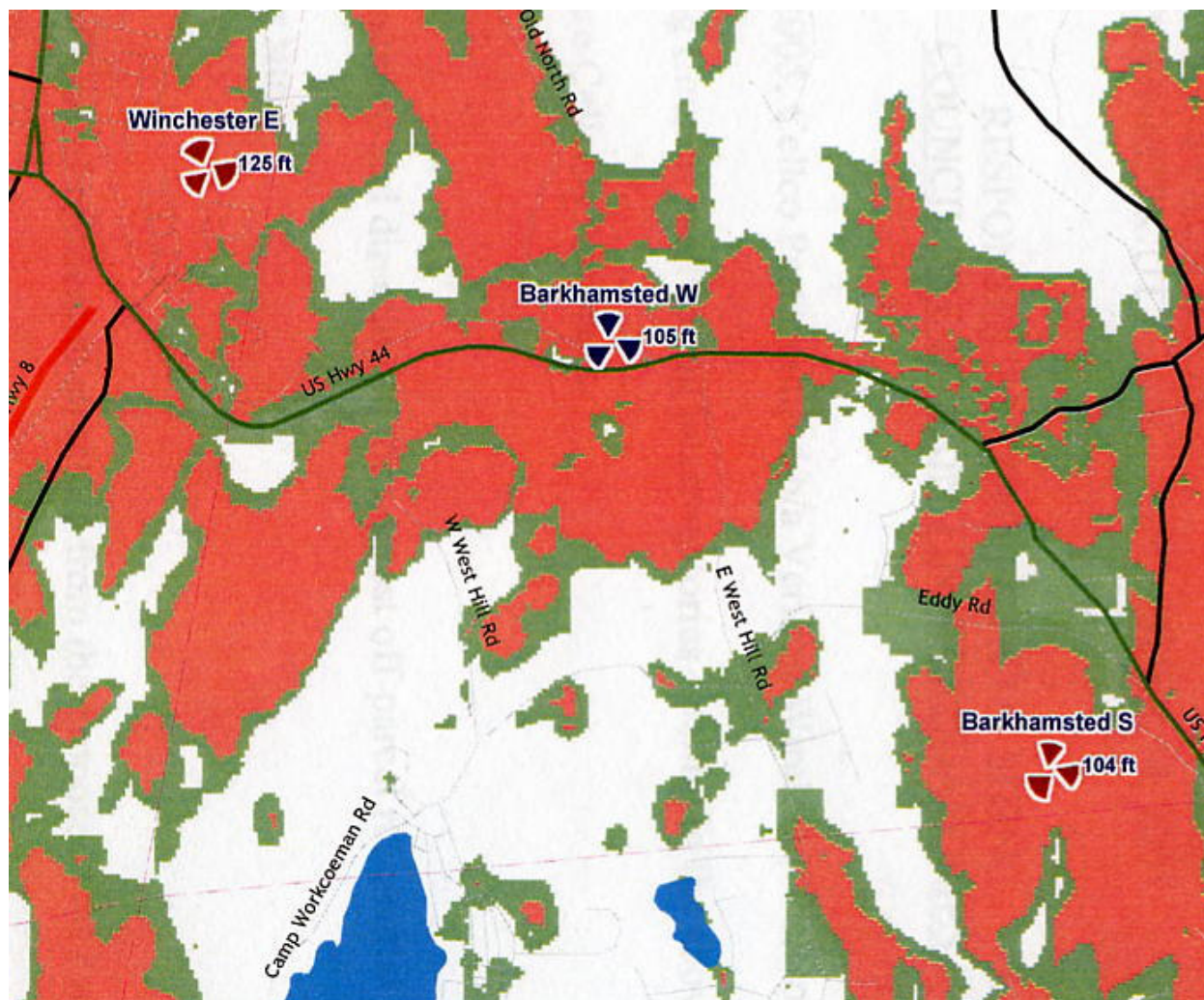
FIGURE 3
VERIZON EXISTING AND PROPOSED COVERAGE FROM
THE OLD NEW HARTFORD ROAD SITE AT 115 FEET



*Coverage from the Old Farm Road site with antennas at 145 feet is not significantly different.

(Verizon 1, Attachment 7)

FIGURE 4
VERIZON EXISTING AND PROPOSED COVERAGE FROM
THE OLD NEW HARTFORD ROAD SITE AT 105 FEET



Coverage



RSSI: > -75 dBm



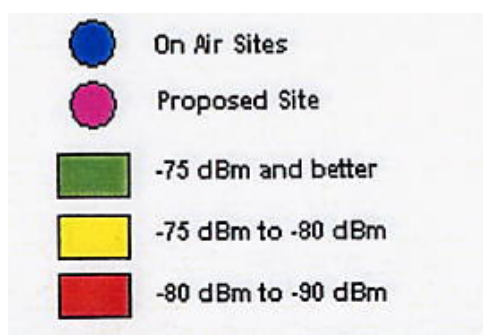
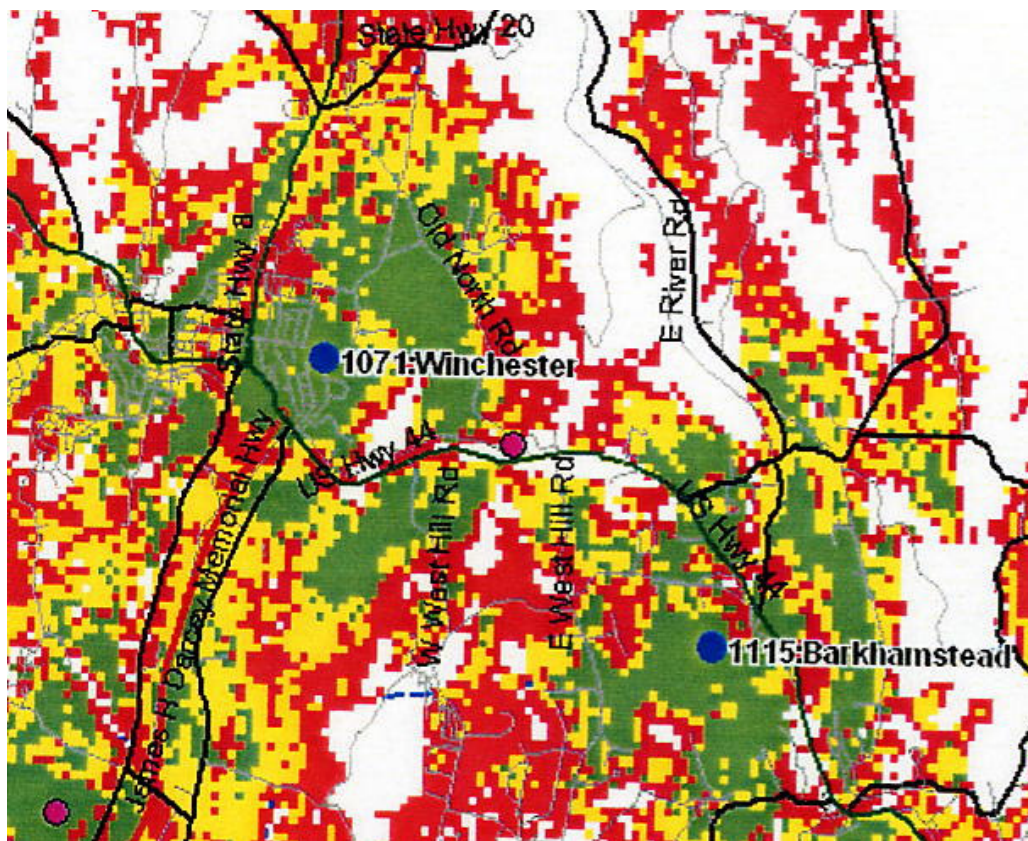
RSSI: -75 to -85 dBm

+ Coverage model depicts a tenth of a mile gap on Route 44 east of the site.

*Coverage from the Old Farm Road site with antennas at 135 feet is not significantly different.

(Verizon 3, Q. 2; Tr. 1, pp. 19-22)

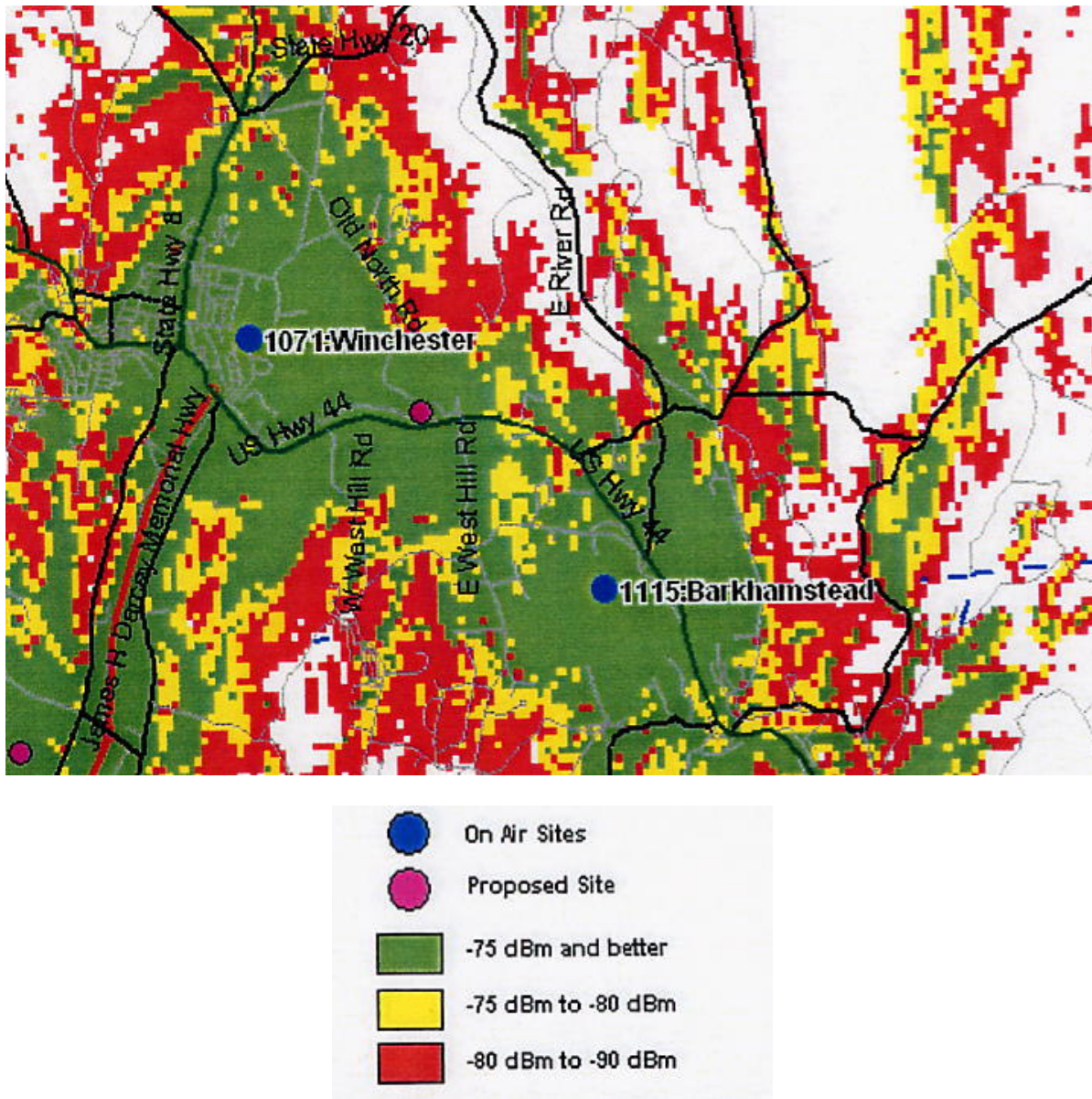
**FIGURE 5
NEW CINGULAR EXISTING COVERAGE**



* Coverage shown is at 1900 MHz.

(New Cingular 1, Q. 5)

FIGURE 6
NEW CINGULAR EXISTING AND PROPOSED COVERAGE FROM
THE OLD NEW HARTFORD ROAD SITE AT 105 FEET



*Coverage shown is at 1900 MHz. Coverage from the Old Farm Road site with antennas at 135 feet is not significantly different.

(New Cingular 1, Q. 5)